

Please type a plus sign (+) inside this box →



PTO/SB/08A (10-96)  
Approved for use through 10/31/99. OMB 0651-0031  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>Complete If Known</b>			
				Application Number <div style="font-size: 1.5em; margin-left: 100px;">10/627,934</div>		Continuation of 09/908,042	
				Filing Date July 25, 2003		First Named Inventor Brian S. Sproat	
				Group Art Unit			
				Examiner Name			
				Attorney Docket Number		ILI 125 CON (2)	
Sheet	1	of	5				

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	US Patent Document		Name of Patentee or Applicant of Cited Document	Date of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
ML		5,113,005		Celebuski	05-12-1992	
ML		5,482,836		Cantor et al.	01-09-1996	
ML		6,410,225		Sproat	06-25-2002	

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>3</sup>
		Office. <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
ML		PCT	WO 97/18312		VIMRX Holdings, Ltd.	05-22-1997		
ML		EP	0 571 087		Rohm & Haas	11-24-1993		

Examine Signature		Date Considered	12/1/04
----------------------	--	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to application.

<sup>1</sup> Unique citation designation number <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SENT TO: Assistant Commission for Patent, Washington, DC 20231.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO		Compl te If Kn wn	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Applicati n Number	Continuati n f 09/908,042
		Filing Date	July 25, 2003
		First Named Inventor	Brian S. Sproat
		Group Art Unit	
		Examiner Name	
Sheet 2 of 5	Attorney Docket Number	ILI 125 CON (2)	

OTHER ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
		BENSELER, et al., "Hammerhead-like Molecules Containing Non-Nucleoside Linkers Are Active RNA Catalysts" <i>J. Am. Chem. Soc.</i> 115:8483-8484 (1993).	
		CUNNINGHAM, et al., "Preparative-scale purification of RNA using an efficient method which combines gel electrophoresis and column chromatography" <i>Nucleic Acids Research</i> 24:3647-3648 (1996).	
		DESJARDINS, et al., "Pharmacokinetics of a Synthetic, Chemically Modified Hammerhead Ribozyme Against the Rat Cytochrome P-450 3A2 mRNA After Single Intravenous Injections" <i>J. Pharmacol. Exp. Ther.</i> 278:1419-1427 (1996).	
		FU, et al., "Hammerhead Ribozymes Containing Non-Nucleoside Linkers Are Active RNA Catalysts" <i>J. Am. Chem. Soc.</i> 116:4591-4598 (1994).	
		GILDEA, et al., "A Versatile Acid-Labile Linker for Modification of Synthetic Biomolecules" <i>Tetrahedron Letters</i> 31:7095-7098 (1990).	
		GÖRTZ & SELIGER, "New Hydrophobic Protecting groups for the chemical synthesis of oligonucleotides" <i>Angew. Chem., Int. Ed. Engl.</i> 20:681 (1981).	
		GREEN, et al., "HPLC Purification of Synthetic Oligodeoxyribo-nucleotides Containing Base- and Backbone- Modified Sequences" <i>BioTechniques</i> 19:836-841 (1995).	
		GUO, et al., "Direct fluorescence analysis of genetic polymorphisms by hybridization with oligonucleotide arrays on glass supports" <i>Nucleic Acids Res.</i> 22:5456-5465 (1994).	
		GUPTA, et al., "Use of the 4-methoxy-4'-octyloxytrityl group as an affinity handle for the purification of synthetic oligonucleotides" <i>J. Chromatogr.</i> 541:341-348 (1991).	
		HERTEL, et al., "Numbering System for the Hammerhead" <i>Nucleic Acids Research</i> 20:3252 (1992).	

Examiner's Signature		Date Considered	12/1/04
----------------------	--	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you require to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →



PTO/SB/08A (10-96)  
Approved for use through 10/31/99. OMB 0651-0031  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

<b>Substitute for form 1449A/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	Continuation of 09/908,042
		Filing Date	July 25, 2003
		First Named Inventor	Brian S. Sproat
		Group Art Unit	
		Examiner Name	
Sheet 3 of 5	Attorney Docket Number	ILI 125 CON (2)	

OTHER ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
h		JOHNSTONE & THORPE, <i>Immunochemistry In Practice</i> (Blackwell Scientific Publications, Oxford, England, 1987) pages 209-216, 241-242, and 30-85.	
		KERKHOF et al., "A Comparison of Substrates for Quantifying the Signal from a Nonradiolabeled DNA Probe" <i>Anal. Biochem.</i> 205:359-364 (1992).	
		LANGER, et al., "Enzymatic Synthesis of Biotin-Labeled Polynucleotides: Novel Nucleic Acid Affinity Probes" <i>Proc. Natl. Acad. Sci. USA</i> 78:6633 (1981).	
		LETSINGER & WU, "Use of a Stilbenedicarboxamide Bridge in Stabilizing, Monitoring, and Photochemically Altering Folded Conformations of Oligonucleotides" <i>J. Am. Chem. Soc.</i> 117:7323-7328 (1995).	
		LYNGSTADAAS, et al., "A synthetic, chemically modified ribozyme eliminates amelogenin, the major translation product in developing mouse enamel <i>in vivo</i> " <i>EMBO Journal</i> 14:5224-5229 (1995).	
		MULLAH & ANDRUS, "Purification of 5'-O-Trityl-On Oligoribonucleotides. Investigation of Phosphate Migration during Purification and Detritylation" <i>Nucleosides &amp; Nucleotides</i> 15:419-430 (1996).	
		MURRAY, et al., "A General Purification Procedure for Chemically Synthesized Oligoribonucleotides" <i>Analytical Biochemistry</i> 218:177-184 (1994).	
		NATT, et al., "Lipocap: a Lipophilic Phosphoramidite-based Capping Reagent" <i>Tetrahedron</i> 53(28): 9829-9836 (1997).	
		OLEJNIK, et al., "Photocleavable biotin phosphoramidite for 5'-end-labelling, affinity purification and phosphorylation of synthetic oligonucleotides" <i>Nucleic Acids Research</i> 24:361-366 (1996).	
h		ORTIGO, et al., "Antisense Effect of Oligodeoxynucleotides with Inverted Terminal Internucleotidic Linkages: A Minimal Modification Protecting against Nucleolytic Degradation" <i>Antisense Res. Dev.</i> 129-148 (1992).	

Examiner's Signature		Date Considered	12/1/04
----------------------	--	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you require to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →



PTO/SB08A (10-96)  
Approved for use through 10/31/99. OMB 0651-0031  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

+

Under the Paperwork Reduction Act of 1996, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		Complete if Known	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Application Number	Continuation of 09/908,042
		Filing Date	July 25, 2003
		First Named Inventor	Brian S. Sproat
		Group Art Unit	
		Examiner Name	
Sheet 4 of 5	Attorney Docket Number	ILI 125 CON (2)	

OTHER ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
u		PANNECOUCKE, et al., "Phosphodiester of 3 B (7 B-hydroxycholesterol) and of 5'(3'-deoxy, 3' azido-thymidine)" <i>Tetrahedron</i> 50(4):1173-1178 (1994).	
		PEASE, et al., "Light-generated oligonucleotide arrays for rapid DNA sequence analysis" <i>Proc. Natl. Acad. Sci. USA</i> 91(11):5022-5026 (1994).	
		POLUSHIN, et al., "On the rapid deprotection of synthetic oligonucleotides and analogs" <i>Nucleic Acids Research</i> 22:639-645 (1995) <i>Protein immobilization: fundamentals and applications</i> , Richard F. Taylor, ed. (M. Dekker, New York, 1991).	
		RAMAGE & WAHL, "4-(17-Tetrabenzo[a,c,g,i]fluorenylmethyl)-4',4"-Dimethoxytrityl Chloride: A Hydrophobic 5'-Protecting Group for the Separation of Synthetic Oligonucleotides" <i>Tetrahedron Letters</i> 34:7133-7136 (1993).	
		REDDY, et al., "Methylamine Deprotection Provides Increased Yield of Oligoribonucleotides" <i>Tetrahedron Letters</i> 36:8929-8932 (1995).	
		SELIGER & SCHMIDT, "Polymer Support Synthesis. XII". Derivatization with the 4-Decyloxytrityl Group as an Aid in the Affinity Chromatography of Oligo- and Polynucleotides" <i>J. Chromatogr.</i> 397:141-151 (1987).	
		SELIGER, et al., "Solid-Phase Oligonucleotide Synthesis with Affinity-Chromatographic Separation of the Product" <i>Tetrahedron Letters</i> 24:2115-2118 (1978).	
		SINHA, et al., "Polymer support oligonucleotide synthesis XVIII <sup>1,2</sup> : use of β-cyanoethyl-N,N-dialkylamino-N-morpholino phosphoramidite of deoxynucleosides for the synthesis of DNA fragments simplifying deprotection and isolation of the final product" <i>Nucleic Acids Research</i> 12:4539-4557 (1984).	
		SPROAT, et al., "An Efficient Method for the Isolation and Purification of Oligoribonucleotides" <i>Nucleosides &amp; Nucleotides</i> 14:255-273 (1995).	
u		STIMPSON, et al., "Real-time detection of DNA hybridization and melting on oligonucleotide arrays by using optical wave guides" <i>Proc. Natl. Acad. Sci. USA</i> 92:6379-6383 (1995).	

Examiner's Signature		Date Considered	12/1/04
----------------------	--	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you require to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

+

Please type a plus sign (+) inside this box →



PTOSB08A (10-96)  
Approved for use through 10/31/99. OMB 0651-0031  
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

<b>Substitute for form 1449A/PTO</b>  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete If Known</b>	
		Application Number	Continuation 109/908,042
		Filing Date	July 25, 2003
		First Named Inventor	Brian S. Sproat
		Group Art Unit	
		Examiner Name	
Sheet 5 of 5	Attorney Docket Number	ILI 125 CON (2)	

OTHER ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner's Initials*	Cite No.†	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T‡
u		SWIDERSKI, et al., "Polystyrene Reverse-Phase Ion-Pair Chromatography of Chimeric Ribozymes" <i>Analytical Biochemistry</i> 216:83-88 (1994).	
		SYVANEN, et al., "Fast quantification of nucleic acid hybrids by affinity-based hybrid collection" <i>Nucleic Acids Res.</i> 14:5037 (1986).	
		TSURUI, et al., "Batchwise Purification of Specific tRNAs by a Solid-Phase DNA Probe" <i>Analytical Biochemistry</i> 221:166-172 (1994).	
		USMAN, et al., "Automated Chemical Synthesis of Long Oligoribonucleotides Using 2'-O-Silylated Ribonucleoside 3'-O-Phosphoramidites on a Controlled-Pore Glass Support: Synthesis of a 43-Nucleotide Sequence Similar to the 3'-Half Molecule of an <i>Escherichia coli</i> Formylmethionine tRNA" <i>J. Am. Chem. Soc.</i> 109:7845-7854 (1987).	
u		WINCOTT, et al., "Synthesis, deprotection, analysis and purification of RNA and ribozymes" <i>Nucleic Acids Research</i> 23:2677-2684 (1995).	

Examiner's Signature		Date Considered	12/1/04
----------------------	--	-----------------	---------

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

† Unique citation designation number ‡ See attached Kinds of U.S. Patent Documents. § Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ¶ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. \* Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. \*\* Applicant to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you require to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.